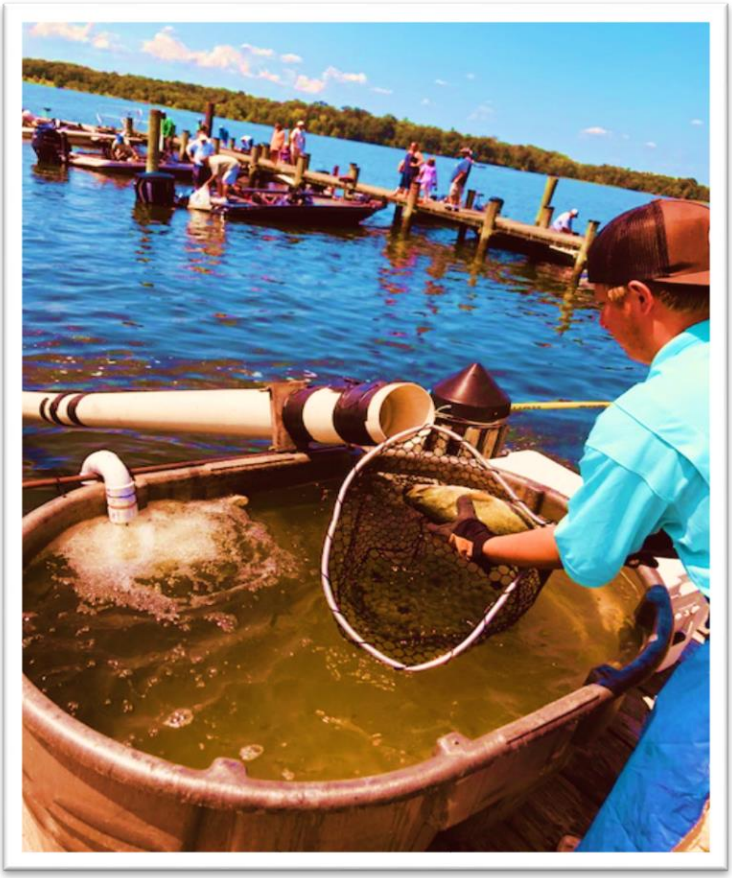

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Thanks for Buying a Fishing License

ARE YOU FISHING IN 2020?

Have you heard of the recruit, retain, and reactivate campaign going on nationwide? Put simply, the country wants you to go fishing.

The 2018 Special Report from the Recreational Boating and Fishing Foundation and The Outdoor Foundation stated that more than 49 million Americans went fishing in 2017. The number of people fishing increased by 1.9 million since 2016. Over 75 percent of anglers fished in freshwater.

Most people fished to relax in nature, whether they fished with family and friends or competed with others, with themselves, or with the fish. Luckily, Maryland offers diverse fishing options to spend time with others for picnic fishing or boat fishing, or for fishing competitions, all within a mosaic of unique fishing habitats. Visit Maryland's Public Access Map, list of bass tournaments, or the Office of Tourism for more information.

FishMaryland is a new recreational angler award program that rewards anglers for memorable catches. Some memorable catches meet their end on the dinner table. The Bay offers lots of delicious fish to support healthy diets, including catfish and perch, and newcomers like snakehead.

Better Habitat, Better Fishing

"Where are the fish?" It is an age-old question that Chesapeake Bay anglers ask when searching seemingly countless tidal creeks and guts, rivers and bays stretching over 4,500 square miles and averaging 21 feet deep. We all understand that fish are influenced by food, shelter and water conditions. But where is that information?

Maryland, Virginia, and the federal government collect and post environmental monitoring data to help us better understand our waters. This goldmine of information provides powerful tools that improve chances of finding fish, which saves fuel, money, and frustration.

Visit Click before you Cast:

http://eyesonthebay.dnr.maryland.gov/eyesonthebay/clickbeforecast.cfm

So how *has* the fishing been in Maryland? Anglers contact the department in lots of ways to share their fishing experiences. Anglers give feedback using the department's Facebook or Twitter accounts, or send emails to Angler's Log. They also submit details using report submission forms for bass tournament directors, or the Volunteer Angler Survey. Recently the department started a FishMaryland program to not only reward anglers for awesome catches, but also provide important data on fishing.

From data provided by anglers, we know that tidal freshwater gave up about one largemouth bass every two hours for recreational anglers in 2019. Five post cards submitted by boaters at Smallwood State Park (Mattawoman Creek of Potomac River) indicated catch rates were about one fish per hour. From non-tidal waters (mainly farm ponds), catch rates were a little higher - about one bass every hour. *Depending on where anglers fished, they caught one to two bass per hour.*

Largemouth bass remains an important target for many sport fish anglers. There were 90 reports from the Volunteer Angler Survey and 74% of them targeted largemouth bass. Luckily, 69% of those anglers *caught* largemouth bass during their fishing trip! The department issued 517 awards for exceptional catches as part of FishMaryland in 2019 and 62 came from largemouth bass anglers – second in number only to Spanish mackerel.

Non-tidal waters, including lakes, ponds, and some rivers, were very popular for anglers targeting bass. Most awards were given to anglers fishing ponds and lakes, which are far more accessible to non-boaters than tidal rivers of the Chesapeake Bay. Eighty percent of the nontidal submissions to the Angler's Log were largemouth bass catches. The most reports came from St. Mary's Lake. These non-tidal ponds and lakes are likely important gateways into fishing this sentinel species, nationwide.

Economically, anglers targeting largemouth bass or smallmouth bass spent about $10 more per trip than other anglers, which is a pattern we have observed annually since 2016 in the Volunteer Angler Survey. Bass anglers spent, on average, $31 for their day of fishing, but spent much more over the year. These results continue to highlight the important economic and time investments made by bass anglers in Maryland.

What Bass Tournaments Teach

Popularity. Most tournament directors are required to get permits every year and those permits tell us when and where tournaments are scheduled, which is important for prioritizing resources that improve fishing areas and support plans for infrastructure building (e.g., weigh-in stations, building marinas). Tidal freshwater rivers of Chesapeake Bay host the greatest number of bass tournaments in Maryland. Fewer tournaments are held in non-tidal waters, like Deep Creek Lake and Conowingo Reservoir. Potomac River and the upper Chesapeake Bay are the most popular tidal waters fished by tournament anglers. Other notable mentions include Nanticoke River and Pocomoke River fisheries. Tournament anglers have taught us where they fish and how they fish. They are also the proverbial canaries in the coal mine of those fisheries – the data they report to Maryland are used to spot problems with fisheries.

Fishery Health. Permitted tournament directors also report how many fish are caught during the tournament, how many people were fishing, and how long they fished. These numbers are used to calculate catch rate, or catch per angler per day. While Potomac River and upper Chesapeake Bay fisheries are highly popular, their average catch rates are lower than for Pocomoke River and Marshyhope Creek fisheries, along with some lake fisheries. Tournament anglers also report the number of dead fish weighed during the tournament, which helps the department monitor fishing mortality. This past year, 2% of the adults caught during the tournament had died in live wells or during the weigh-in.

Catch rates on tidal Potomac River, after years of highs between 2007 and 2012, slumped to between one or two bass weighed per angler-day. Catch rates have rebounded since 2016 to levels of about two to three bass weighed per angler per day during the 12-inch season.

By all accounts, fishing for bass has gotten better on the tidal Potomac River and catch rates for the upper Chesapeake Bay are now among the highest of the time series, to almost three bass weighed per angler per day. Fishing has gotten better on the tidal Potomac River and in the upper Chesapeake Bay. Try other tidal or lake fisheries because they offer as high or higher catch rates.

Population Trends. Tournament data, along with data collected during the department's Tidal Bass Survey, can detect problems with the population. We've learned that the department's survey detects a problem with a population a couple of years before anglers notice the problem in their catch rates. And likewise, the department's data identifies the rebuilding of a population before angler catch rates increase. On the other hand, tournament anglers who may be pre-fishing or fishing a tournament, see problems that may not be noted during the department's Tidal Bass Survey. These problems have included decreases in submerged grasses, pollution, excessive mortality and disease. Gathering this information before a problem affects the population is essential for protecting the fishery.

Effective Stocking. Tournament data is also used to determine the success of stocking programs. The department has routinely worked with Maryland Bass Nation and Wheelabrator Technologies, Inc. to annually stock Gunpowder River and Middle River. Catch rates for Gunpowder River have increased and are at levels similar to other rivers (almost two bass weighed per angler per day). Stocking Choptank River with subadult largemouth bass (mostly 8" – 10") may have also helped. Recent catch rates reported by tournament anglers were higher than in the 2000s, but similar to those in 1990.

MANAGEMENT

Subcommittee Highlights

The Black Bass Advisory Subcommittee is an appointed public stakeholder group that advises the department on management needs for black bass fisheries in the state. In 2019, they:

- **NEW MEMBERS**: Mr. Richard Batiuk, Mr. Michael Brooks Jr., Ms. Lindsey Browning, Mr. Adam Hugoboom, Mr. John Weiskopf and Mr. James Edward Wicht III.
- Advised no changes to regulations restricting possession for black bass fisheries.
- Recommended study on the impacts of haul seining on bass nests.
- Advised widespread publicity when anglers are cited for illegally possessing largemouth bass by Natural Resources Police.

The public is invited to attend all meetings. Check Calendar for dates.

EXTERNAL TAG. *When catching largemouth bass, report tag number by phone or website.*

Potomac River Bass Management – Time for a New Partnership

The largemouth bass fishery of tidal Potomac River is among the most popular in the Mid-Atlantic region and the United States. This fishery is managed by resource agencies from four jurisdictions that include Maryland, Virginia, District of Columbia and Potomac River Fisheries Commission. The Black Bass Advisory Subcommittee suggested that agencies create a routine assessment of the fishery.

The goal of the cooperative management strategy is to jointly monitor the largemouth bass fishery in tidal freshwater of Potomac River by conducting surveys and reporting an assessment for the fishery. Beginning 2023, a joint assessment report will be published every three years for stakeholders.

The **objectives** of the partnership are:

- Estimate abundance of stock size largemouth bass (≥ 10 inches in total length) from tidal freshwater of Potomac River using a mark-recapture project and recreational creel data;
- Estimate abundance of quality (≥ 12 inches in total length) and preferred size (≥ 15 inches in total length) largemouth bass from tidal freshwater of the Potomac River using a mark-recapture project and tournament creel data.

What can you do? Bass will be tagged in spring 2021. If you catch a tagged largemouth bass, please report it. Anglers may report the tag number and date by calling the hotline (1-804-367-2925) or through the department's Volunteer Angler Survey for freshwater fishes.

Top Tidal Bass Fisheries in Maryland

The Tidal Bass Survey uses boat electrofishing to sample largemouth bass during fall in many of the major tidal freshwater rivers of the Chesapeake Bay watershed. The information is used to help create a fishery assessment that depicts the status of a population relative to at least a 10-year baseline of data. Data from anglers can also be used in an assessment, but the quality of these data depend on the number of participants, which varies every year and can be insufficient for less popular fisheries that the department seeks to improve. The assessments that follow include results from these surveys as well as information reported by tournament directors and anglers.

Potomac River
Status: Good

Average catch from Potomac River was 50.7 bass per electrofishing hour, which was much greater than when the fishery took a downward turn (2013 – 2015) and is normal for the survey. The fishery has improved likely because of better spawning habitat conditions, lower annual mortality levels, and stocking efforts. It is not yet at peak levels of catch observed between 2005 and 2009, when tournament anglers also reported great fishing. Unfortunately, the catch of juveniles in 2019 was much lower than the previous three years. To help buffer poor years of natural reproduction, the department has annually stocked Potomac River since 2016. Catches by tournament anglers during the spawning season were better than average for the fishery, but not as good as usual during the 12-inch season. It is possible that reduced tournament catches during the 12-inch season and weak reproduction were partially due to declines in the extent of submerged aquatic vegetation in some areas in 2019. Body growth rate and body condition (or fattiness of the fish) were good and little disease was observed; only 12 of 357 fish (or about three percent) had signs of disease. Because of generally good catch levels, but reduced reproduction, the status of this fishery was characterized as *good*.

Upper Chesapeake Bay
Status: Good

Average catch from upper Chesapeake Bay (Susquehanna River, Susquehanna Flats, Northeast River, and adjacent creeks) was 78.3 bass per electrofishing hour, which is much greater than it was between 2011 and 2015 and similar to yearly highs in the survey. The increased average catch was likely owed to better spawning habitat conditions, lower annual mortality levels, and stocking efforts. The department has annually stocked the upper Chesapeake Bay since 2016. Catch levels observed in 2019 indicated that population indices were similar to those between 2007 and 2010, when the fishery was fishing great. The average numbers of fish weighed by tournament anglers were greater in 2019 than most years since 2005 when the department began routinely recording data. Anglers weighed an average of two to three bass per day during 12-inch and 15-inch seasons. Unfortunately, there were 24 of 270 fish (or nine percent) with some sign of infection on the skin, which was unusually high. The majority of these fish was collected in Northeast River. Despite these observations, total annual mortality was below average, which indicates that annual survivorship was above average. Because of good population metrics, but unusually high signs of infection, the status of this fishery was characterized as *good*.

WORKING. *Tidal Bass Survey measuring a largemouth bass for its total length.*

Pocomoke River
Status: Great

Average catch from Pocomoke River was 33.4 bass per electrofishing hour, which was greater than in previous years and similar to yearly highs in the survey. Though only nine of the ten years of survey data are available for baseline comparisons, reproduction was good and other aspects of the population appeared normal. With reasonably high catch rates and good reproduction, this population is as good as it ever has been in the Tidal Bass Survey. Average growth rate was lower than during previous

surveys on Pocomoke River, but was similar to those measured for populations in Gunpowder River and Potomac River. Tournament anglers weighed over three bass per day during the 12-inch season and less than one bass per day during the 15-inch season, which are both similar to previous years. Only one tournament report was received from directors during the 15-inch season. Because of relatively high levels of reproduction and catch, as well as good fishing reports from tournament directors, the status of this fishery has been characterized as *great*.

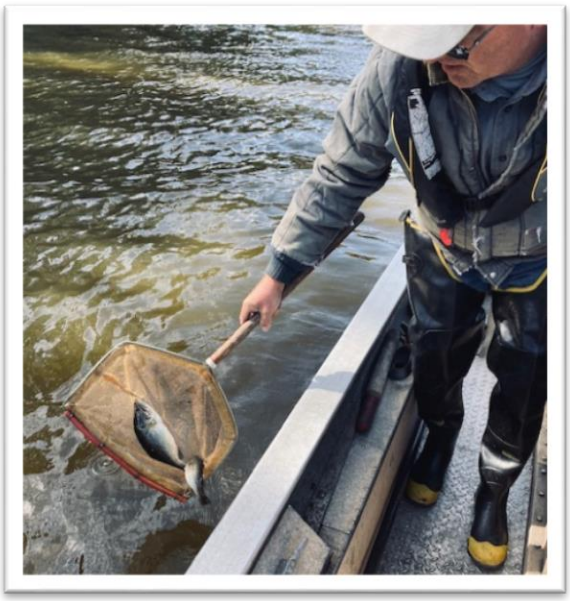
Gunpowder River
Status: Rebuilding

Average catch from Gunpowder River was 26.3 bass per electrofishing hour and has annually increased since 2014, suggesting that the population is growing. The department has consistently stocked Gunpowder River since 2014, with doubled efforts since 2017 as part of a partnership with Wheelabrator Technologies, Inc. Not only has the number of juveniles increased, but the relative abundance of age 1+ fish in 2019 was almost double that of estimates since 2015. While bass grew less quickly than those reported for other riverine populations, body condition was normal and no collected fish had signs of disease. During the 12-inch season, tournament anglers from two tournaments reportedly weighed an average of one bass per day, which was double that reported in 2018. Because of annual increases in relative abundance and the on-going stocking efforts to rebuild the fishery, the status of this fishery has been characterized as *rebuilding*.

Marshyhope Creek
Status: Rebuilding

Average catch from Marshyhope Creek (Nanticoke River) was 16.2 bass per electrofishing hour, which was below average for a third year in a row from Marshyhope Creek. The downward trend in catch has also been observed in the Nanticoke River by Delaware's Natural Resources and Environmental Control (DNREC). The relative abundance of juveniles collected during the survey in Marshyhope Creek, though, was greater than the previous two years. To further support abundance of post-juvenile subadults, the department stocked Marshyhope Creek with subadults (8 inches – 12 inches) in 2019 and is planning to stock it again in 2020. Natural reproduction and periodic stocking should increase abundance of young age classes and translate to improved catch rates as these fish mature. While tournament anglers have weighed more fish on average since 2018, there were only three reports from tournament directors, which is a small sample size for inferring general trends in fishing. Additional management actions might include partnering with fishery scientists from DNREC on initiatives to support the fishery. Because of the stocking efforts and greater natural reproduction that should improve abundance of older age classes, the status of this fishery has been characterized as *rebuilding*.

STOCKING. *Staff stocks largemouth bass to Marshyhope Creek. Rivers stocked in 2019 can be found by clicking here.*



CONSERVATION

Conservation Awards for Tournament Directors

CONGRATULATIONS!

Herb Weichmann (Precision Tackle Series) won the conservation director award in 2019 to support purchasing weigh-in supplies for tournaments held at Glen Cove on Conowingo Reservoir. Herb has been a long-time supporter of bass fishing tournaments in the upper Chesapeake Bay and has hosted tournaments for many years. He also supports fishing in the upper Chesapeake Bay by managing a bait and tackle store in North East. This past year, he worked with the department to secure weigh-in supplies, such as tubs and mesh bags, which should support bass tournaments held at Glen Cove Marina by improving the efficiency of weigh-ins and release of bass to the water following the tournament.

CONSERVATION AWARD PROCESS

1. Director or co-director applicants should electronically submit application to joseph.love@maryland.gov or branson.williams@maryland.gov.
2. Director or co-director applicants will be notified of their standing by June.
3. Supply purchases will be made by the department on behalf of the director or co-director beginning of July.

CONSERVATION AWARD

Supply costs should not exceed $500 and up to two awards are given per year.

Apply for a Conservation Award!

https://dnr.maryland.gov/fisheries/Pages/bass/bass-conservation.aspx

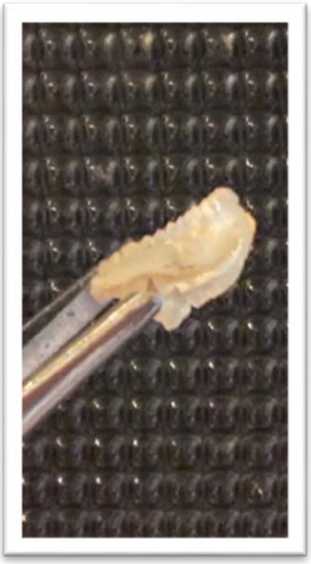
CONSERVATION AWARD CRITERIA

1. Director or co-director applicant should identify at least one best management practice when obtaining a permit for the tournament from Fishing and Boating Services.
2. All tournament participants should complete Fishing and Boating Services' online Bass Class, which includes boater safety videos and conservation related videos starring state and national leaders in bass conservation.
3. The director or co-director applicant should write a brief (500 words or fewer) narrative that describes the supply needs of the tournament and the reason for their need. Examples of supply needs could include: a waiver of the department's costs for re-distributing fish; on-board hand scales or rulers for on-the-water weigh-ins; non-piercing cull clips; barbless tackle for tournament participants; thermometers for live wells; life jackets; aerators; ice; mesh bags or bag systems for weighing bass; a shade canopy; cattle tank for offering highly oxygenated water conditions; rubber nets; or weigh-in systems that promote survival of largemouth bass.

Why take the Bass Class? It's free, a challenge, and you'll meet some of the most prominent bass anglers who fish Maryland waters. Anglers who pass the Bass Class will earn a certificate to hang on the wall, or post for all social media fans to see.

The Science of Aging Bass

Biologists age fish for lots of reasons, from determining growth rates to evaluating annual mortality and recruitment trends, all to assess population health. The department has aged over 700 largemouth bass. Biologists can estimate the age of fish lots of ways, but this is how we age bass.



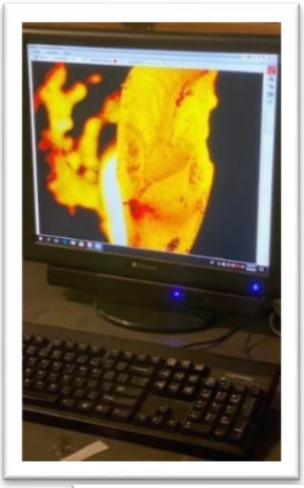
STEP 1. GET THE OTOLITH. WE USE THE BIGGEST OF THREE EARBONES. FISH USE THEM FOR BALANCING IN WATER - YOU HAVE THEM TOO! WE USE IT TO AGE FISH.

STEP 2. BREAK THE OTOLITH IN HALF AND POLISH THE FLATTEST END OF ONE HALF.

STEP 3. PLACE THE UNPOLISHED END INTO CLAY AND PLACE THE POLISHED END BENEATH THE LENSE OF A DISSECTING MICROSCOPE (OR A STEREOSCOPE).

STEP 4. ILLUMINATE THE OTOLITH WITH A HIGH POWERED LIGHT.

STEP 5. THE LABORATORY. THE DISSECTING MICROSCOPE IS HOOKED UP TO A CAMERA, WHICH IS VIEWED WITH A COMPUTER TO ENLARGE THE IMAGE.



STEP 6. AFTER WORKING HARD AT AIMING THE CAMERA PERFECTLY, AND FOCUSING ON THE OTOLITH, FINALLY AN IMAGE COMES INTO FOCUS ON THE COMPUTER!

STEP 7. AN IMAGE OF THE OTOLITH IS SNAPPED AND THE RINGS ON THE BONE ARE COUNTED. HOW MANY DO YOU COUNT?

Answer: nine